

Talk title: Cosmic Microwave Background Polarization and Inflation

Abstract: Measurements of the cosmic microwave background (CMB) offer a means to explore the universe at a very early epoch. Specifically, if the universe went through a brief period of exponential expansion called inflation as current data suggest, gravitational waves from this period would polarize the CMB in a specific pattern. At GSFC, we are currently working towards two experiments that work in concert to measure this polarization pattern in search of evidence for inflation. The Cosmology Large Angular Scale Surveyor (CLASS) will measure the polarization at frequencies between 40 and 150 GHz from the Atacama Desert in Chile. The Primordial Inflation Polarization Explorer (PIPER) is a balloon-borne experiment that will make similar measurements at frequencies between 200 and 600 GHz.